



Pb

Lead Awareness



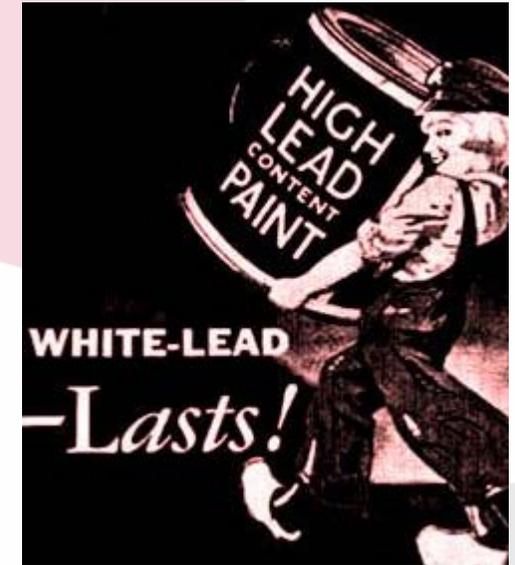
What is Lead

- Naturally occurring mineral
- Soft
- Used in many products
- Dangerous if inhaled or ingested



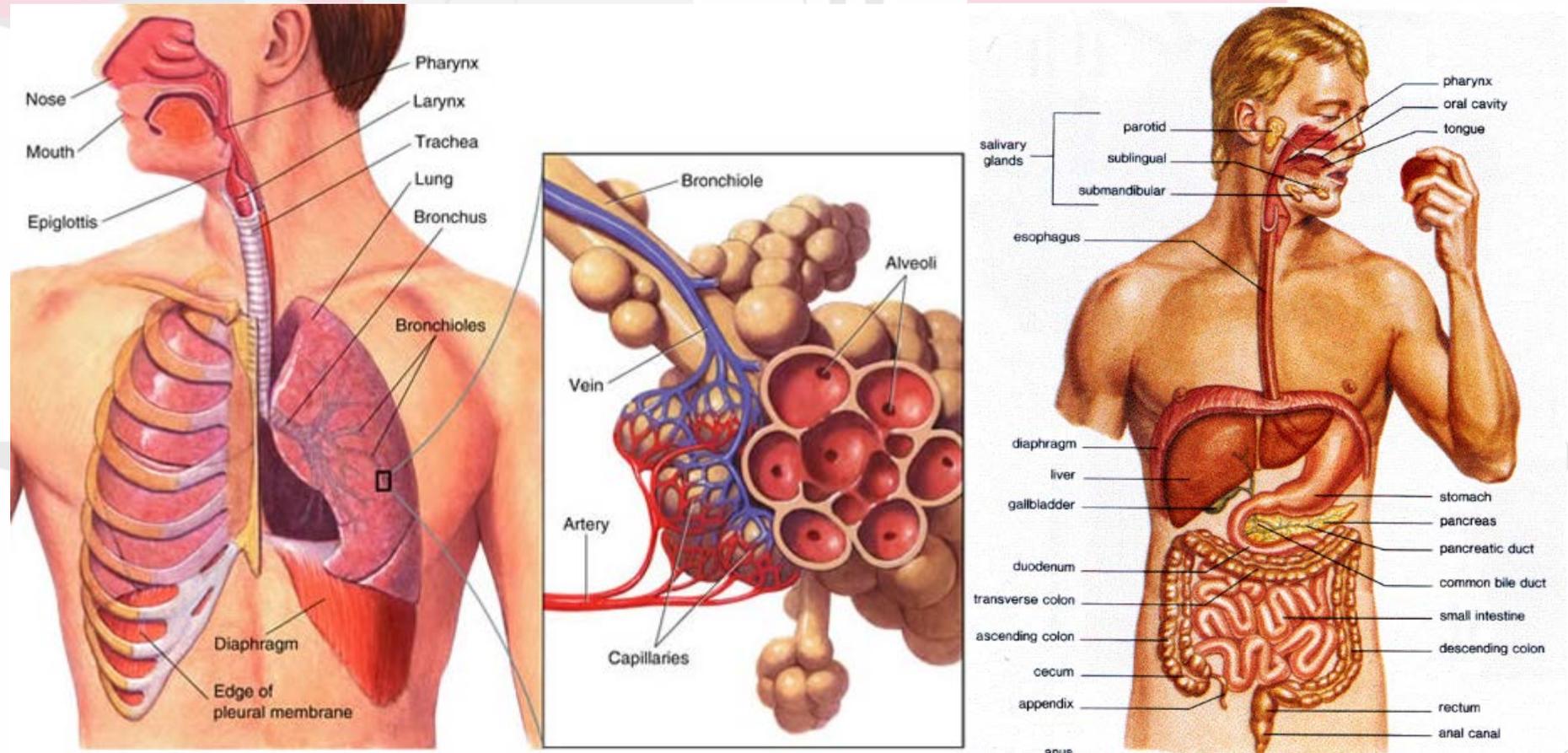
Where is Lead Found

- Paints
- Pipes
- Ceramics
- Plumbing
- Solders
- Gasoline
- Batteries
- Ammunitions



How Does Lead Enter the Body

- Inhalation
- Ingestion



Acute Health Effects

- Short duration at high doses are rare, however, not impossible.
- Short term very high doses can cause:
 - Seizures
 - Coma
 - Death



Chronic Health Effects

- Long term exposure is the more common workplace exposure.
- Blood-forming - decreased hemoglobin (the substance in the blood that carries oxygen to the cells) and ultimately anemia
- Attacks the nervous system
- Kidney disease
- Urinary tract complications
- Reproductive system - impotence and sterility in men. Lead can alter the structure of sperm cells raising the risk of birth defects.



Children Are Most Susceptible

- Children six years old and younger are most susceptible to the effects of lead.
- In children, the main target for lead toxicity is the nervous system. Even very low levels of lead in the blood of children can result in:
 - Permanent damage to the brain and nervous system, leading to behavior and learning problems, lower IQ, and hearing problems
 - Slowed growth
 - Anemia



Pregnant Women

- Lead can accumulate in our bodies over time, where it is stored in bones along with calcium. During pregnancy, lead is released from bones as maternal calcium is used to help form the bones of the fetus. This is particularly true if a woman does not have enough dietary calcium. Lead can also be circulated from the mother's blood stream through the placenta to the fetus. Lead in a pregnant woman's body can result in serious effects on the pregnancy and her developing fetus, including:
 - Miscarriage
 - Reduced growth of the fetus and premature birth



Medical Surveillance

- Lead tends to store in the person's organs (tissues) and circulates within the bloodstream.
- Tests can identify the amount circulating, however cannot determine the amount the body has stored.



Blood Levels

- Prevention of adverse health effects for most workers from exposure to lead throughout a working lifetime requires that worker blood lead (PbB) levels be maintained at or below forty micrograms per one hundred grams of whole blood (40 ug/100g). The blood lead levels of workers (both male and female workers) who intend to have children should be maintained below 30 ug/100g to minimize adverse reproductive health effects to the parents and to the developing fetus.



How Do I Protect Myself

- Identify the task at hand
- Do not breath in dusts which contain lead
- Personal Hygiene
 - Clothes
 - Wash your hands



Permissible Exposure Limit

- The employer shall assure that no employee is exposed to lead at concentrations greater than fifty micrograms per cubic meter of air ($50 \mu\text{g}/\text{m}^3$) averaged over an 8-hour period.
- Above the PEL the use of engineering controls, safe work practices, then PPE shall be used.
 - Respirators



Respirator

- Task- Manual demolition of structures (e.g, dry wall), manual scraping, manual sanding, heat gun applications, and power tool cleaning with dust collection systems.
 - Half Mask Respirator with an Assigned Protection Factor of 10 up to 10x PEL.
- Task- Abrasive blasting, welding, cutting, & torch burning.
 - Full Face Respirator protection with an Assigned Protection Factor of 50 up to 50x PEL.



Respirator Cartridge

- High Efficiency Particulate Air (HEPA)
- Magenta in color
 - Dark pink or light purple
- 99.97% effective
 - N100
 - R100
 - P100



Placing Signs While You Work

- The employer shall post the following warning signs in each work area where an employee's exposure to lead is above the PEL.

DANGER

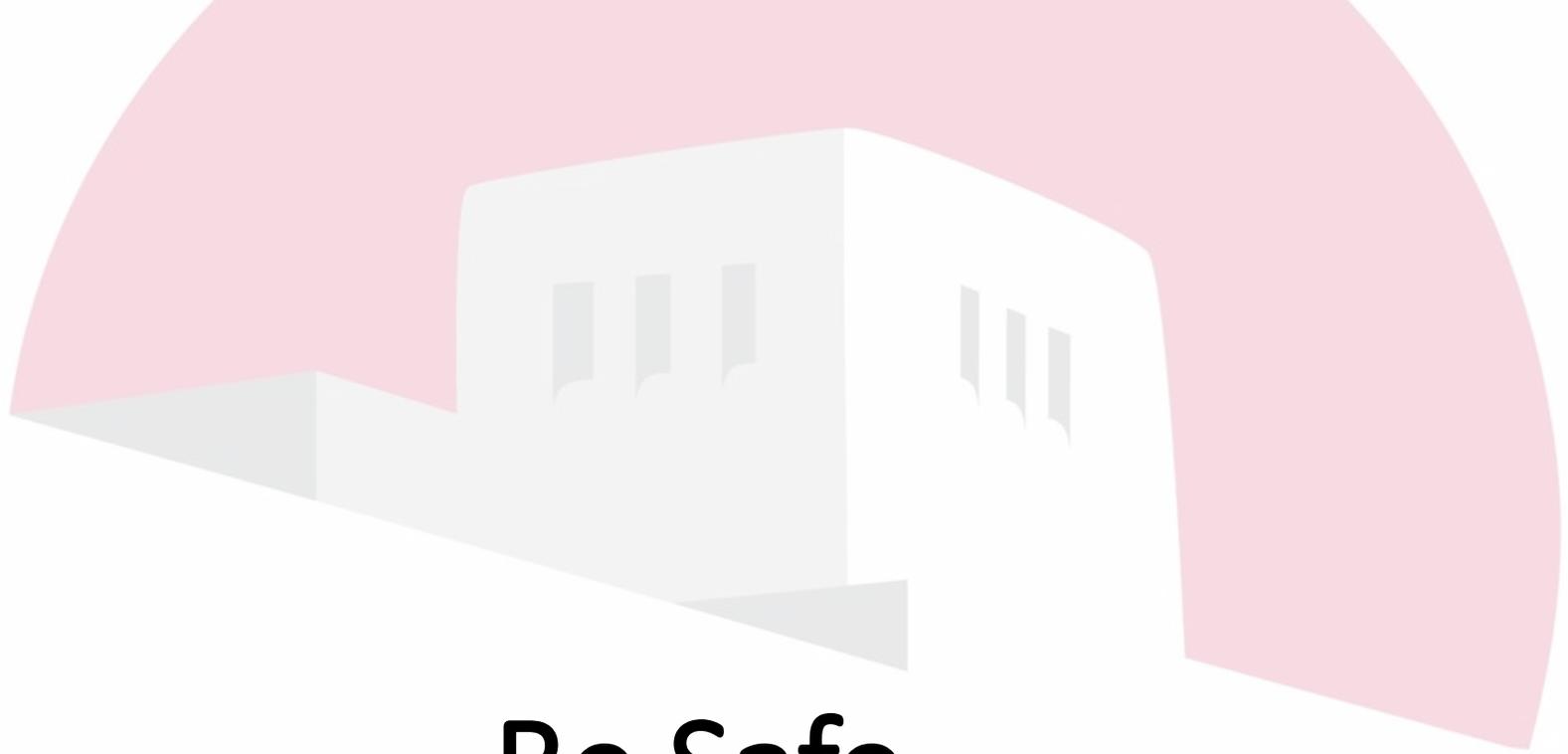
LEAD WORK AREA

MAY DAMAGE FERTILITY OR THE UNBORN CHILD

CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM

DO NOT EAT, DRINK OR SMOKE IN THIS AREA





Be Safe

INNM



Acknowledgement

I _____, have completed the Lead Awareness training.
(Print Name)

Date: _____

Please print the acknowledgement sheet, fill in requested information and email to srsweb@unm.edu to complete training.